

# SILVER BEACH MARINA (PWSNO 1280188) SOURCE WATER ASSESSMENT REPORT

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March 29, 2001



## State of Idaho Department of Environmental Quality

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## Source Water Assessment for Silver Beach Marina

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source and characteristics associated with either your aquifer or the watershed in which you live.

This report, *Source Water Assessment for Silver Beach Marina* describes the public drinking water system, the potential contaminant sources located within a 1000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Drinking water for Silver Beach Marina comes from two wells drilled in sedimentary formation at the base of a small watershed on the north side of Coeur d'Alene Lake. Well #1, drilled in 1990 on the western edge of the Marina parking lot; is 180 feet deep and is completed in a layer of broken shale beneath a 37-foot layer of solid shale. Well #2, drilled in 1997 near the eastern edge of the parking lot, is 112 feet deep. The casing extends through a perched water table and a 51-foot clay bed to a water-bearing sand and gravel stratum. The 20-foot deep surface seal ends above the clay bed.

Water from the wells is treated for corrosivity and is chlorinated before distribution. . The marina is required to test for microbial and nitrate contamination. Total Coliform bacteria present in samples drawn in December 1996, February 1993 and August 1992 apparently related to the distribution system rather than contamination of the well. Total nitrate concentrations have fluctuated between 0.897 and 2.65 mg/L since 1995. The Maximum Contaminant Level for nitrate is 10 mg/l.

Based on well construction details, hydrologic sensitivity factors associated with the well sites and the potential contaminant inventory within the 1000-foot boundaries, both of the Silver Beach Marina wells ranked moderately susceptible to inorganic chemical (IOC), organic chemical (SOC, VOC) and microbial contamination. A copy of the susceptibility analysis for your system along with a map showing potential contaminant sources is included with this summary. Information regarding potential contaminants within the 1000-foot boundaries shown on the map is summarized on Table 1.

**Table 1. Silver Beach Marina Potential Contaminant Inventory.**

Map ID	Source Description	Source of Information	Potential Contaminants <sup>2</sup>
1	Petroleum Storage	UST <sup>1</sup> Database	VOC, SOC
2	Surface Water	USGS Map	IOC ,VOC, SOC, Microbial
3	Parking Lot, Roads	USGS Map	IOC ,VOC, SOC, Microbial
4	Septic Drainfield	PWS File	IOC, Microbial

1. *Underground Storage Tank*

2. *IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical*

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

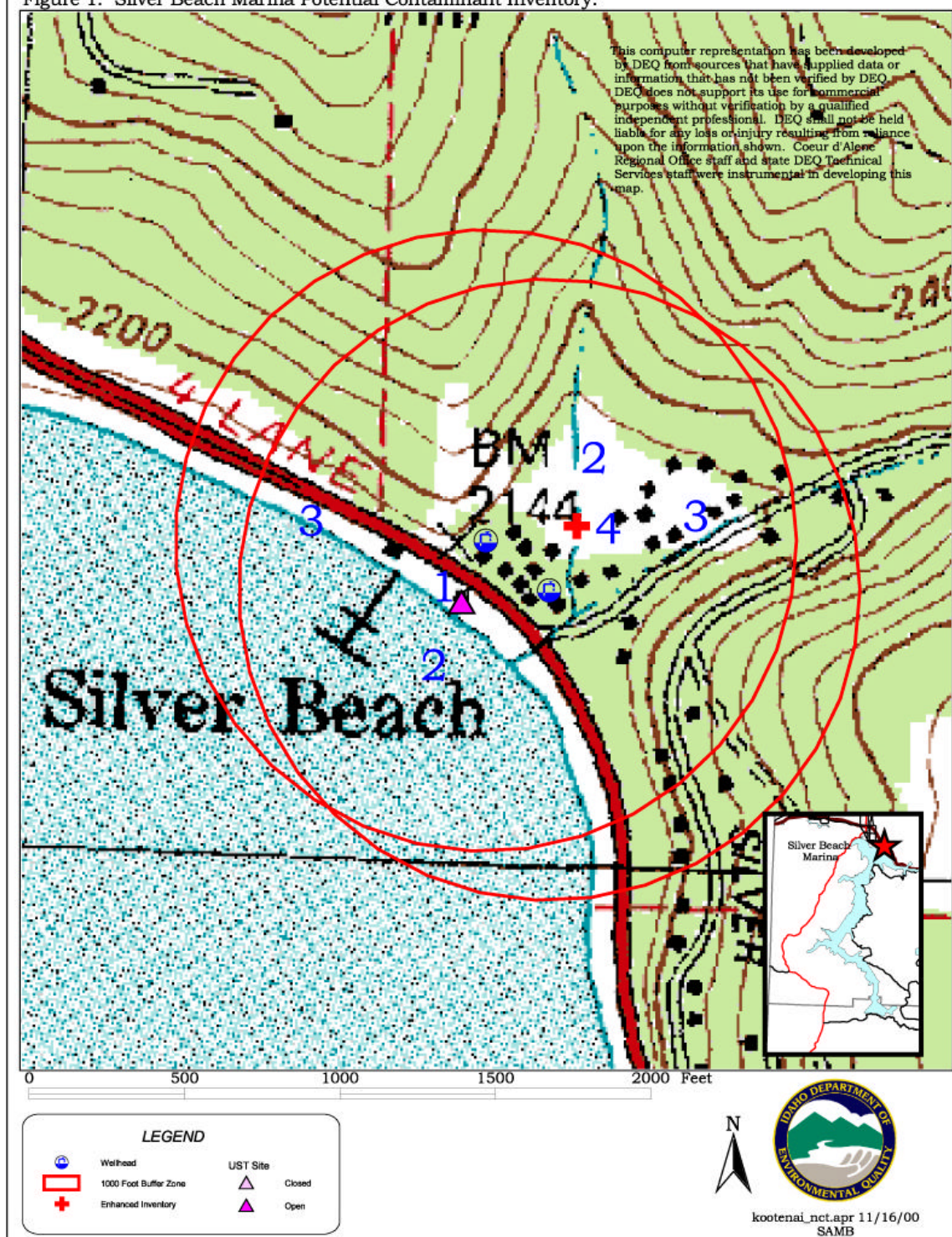
For Silver Beach Marina, source water protection activities should focus first on the area immediately around the wells. Chemicals used for parking lot maintenance must not be applied within the sanitary setback zone (50-foot radius surrounding the well). RV parking should be located as far from the wells as possible, and should be monitored for wastewater dumping. Because Silver Beach Marina doesn't have direct jurisdiction over all the land in the 1000-foot zones shown on the map, it would be a good idea to enlist the cooperation of the highway district to limit the use of road maintenance chemicals in the protection zone. Neighbors should be informed that they live in a well recharge zone, and can be asked to participate in water protection activities like household hazardous chemical collection days, septic tank maintenance workshops and the like. Another activity to consider is periodic inventories of the area delineated around your wells to document land use changes, new businesses, roads, houses, and septic systems. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

**DEQ website:**

<http://www.deq.state.id.us>

Figure 1. Silver Beach Marina Potential Contaminant Inventory.



# Attachment A

## Silver Beach Marina Susceptibility Analysis Worksheet

**Ground Water Susceptibility**Public Water System Name : **SILVER BEACH MARINA**Well # : **WELL #1**Public Water System Number : **1280188**

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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	2/27/90				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES GWUDI inspection 1/31/00				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>2</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>5</b>			
<b>3. Potential Contaminant / Land Use - ZONE 1A</b>		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score - Zone 1A</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Potential Contaminant / Land Use - ZONE 1B</b>					
Contaminant sources present (Number of Sources)	YES	3	3	3	3
(Score = # Sources X 2 ) 8 Points Maximum		6	6	6	6
Sources of Class II or III leacheable contaminants or Microbials	YES	3	3	3	
4 Points Maximum		3	3	3	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>9</b>	<b>9</b>	<b>9</b>	<b>6</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>11</b>	<b>11</b>	<b>11</b>	<b>8</b>
<b>4. Final Susceptibility Source Score</b>		<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	Moderate

## Ground Water Susceptibility

Public Water System Name :

SILVER BEACH MARINA

Well # :

WELL 2

Public Water System Number :

1280188

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1. System Construction		SCORE			
Drill Date	1/23/97				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	GWUDI Inspection 1/31/00			
Well meets IDWR construction standards	NO		1		
Wellhead and surface seal maintained	YES		0		
Casing and annular seal extend to low permeability unit	NO		2		
Highest production 100 feet below static water level	NO		1		
Well located outside the 100 year flood plain	YES		0		
<b>Total System Construction Score</b>			<b>4</b>		
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO		2		
Vadose zone composed of gravel, fractured rock or unknown	YES		1		
Depth to first water > 300 feet	NO		1		
Aquitard present with > 50 feet cumulative thickness	YES		0		
<b>Total Hydrologic Score</b>			<b>4</b>		
3. Potential Contaminant / Land Use - ZONE 1A		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score - Zone 1A</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	2	3	3	3
(Score = # Sources X 2 ) 8 Points Maximum		4	6	6	6
Sources of Class II or III leacheable contaminants or Microbials	YES	3	3	3	
4 Points Maximum		3	3	3	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>7</b>	<b>9</b>	<b>9</b>	<b>6</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>9</b>	<b>11</b>	<b>11</b>	<b>8</b>

<b>4. Final Susceptibility Source Score</b>	<b>10</b>	<b>11</b>	<b>11</b>	<b>11</b>
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<b>5. Final Well Ranking</b>	Moderate	Moderate	Moderate	Moderate
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The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility.

## POTENTIAL CONTAMINANT INVENTORY

### LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as **Superfund** is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100-year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.